

Application No.: 09/954,717
Amendment Dated February 26, 2008
Reply to Office Communication of January 28, 2008
Docket No.: P051

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Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (previously presented) A method of forming an assembly of optical components, comprising:
providing a mold;
positioning a first component in the mold;
positioning a second component in the mold; and
applying a formable material into the mold to form a waveguide for carrying light between the first and second components, the waveguide forming an optical path between the first component and the second component, at least one of the first or second components including a laser or other active optical component.
2. (previously presented) The method of claim 1 in which one of the first or second components is an optical fiber or other passive optical component.
3. (cancelled)
4. (original) The method of claim 1 further comprising removing the first component, the second component, and the waveguide from a mold used to form the waveguide by providing a support structure to support the first component, the second component, and the waveguide as it is removed.
5. (original) The method of claim 4 in which the support structure is adhered to the first component, the second component, and the waveguide.
6. (original) The method of claim 5 in which the support structure is molded onto

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the first component, the second component, and the waveguide.

7. (original) The method of claim 6 in which providing a support structure includes molding a cladding material to form the support structure.

8. (original) The method of claim 5 in which the support structure includes a sticky surface and in which the support structure is adhered to the first component, the second component, and the waveguide by contacting to the sticky surface.

9. (original) The method of claim 1 further comprising applying a second formable material into the mold to clad the waveguide material.

10. (original) The method of claim 9 in which applying the second formable material includes applying the material to fix the first and second component together in alignment.

11. (original) The method of claim 10 further comprising inserting a substrate element into the mold and in which applying the second formable material includes applying the second formable material to fix the first and second components onto the substrate.

12. (original) The method of claim 9 in which applying the second formable material includes applying the material to form an enclosure or other protecting, supporting or subsequent aligning structure.

13. (original) The method of claim 9 in which a third formable material is applied to form an enclosure or other protecting, supporting or subsequent aligning structure.

Claims 14-51 (cancelled).

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52. (previously presented) The method of claim 1 in which positioning the laser or other active optical component includes using bumps associated with electrical contacts on the component.

53. (previously presented) The method of claim 1 in which positioning the laser or other active optical component includes using bumps, pins, precision laser-drilled or micro-machined holes associated with electrical contacts on the component.

54. (previously presented) The method of claim 1 in which positioning the laser or other active optical component includes using precision location features provide by the component manufacturer.

55. (previously presented) The method of claim 1 in which positioning a first component in the mold includes positioning a single mode optical fiber in the mold.

Claims 56-60 (cancelled)

61. (currently amended) The A method of claim 56 in which forming an assembly of optical components, comprising:

positioning a first component in a mold;

positioning a second component in the mold, such that positioning a the first component in a the mold or positioning a the second component in the mold includes aligning an active optical element using an alignment structure; and

applying a formable material into the mold to form a light-carrying waveguide between the first and second components, the waveguide forming an optical path between the first component and the second component includes applying a formable material into the mold to form a light carrying guide to the active optical component, the light carrying

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waveguide guide being sufficiently aligned with the active optical element to eliminate the need for active alignment; and

removing the first component, the second component, and the waveguide from a mold used to form the waveguide by providing a support structure to support the first component, the second component, and the waveguide as it is removed.

Claims 62 and 63 (cancelled)

64. (previously presented) The method of claim 61 in which the light carrying waveguide guide is aligned with the active optical element to within 5 microns.

65. (previously presented) The method of claim 61 in which the light carrying waveguide guide is aligned with the active optical element to within 3 microns.

66. (previously presented) A method of making an optical assembly, comprising: providing a precision mold having an alignment structure within the mold for aligning at least one active optical element and having a structure for forming a light-carrying waveguide to the at least one optical element;

positioning the at least one active optical component within the precision mold using the alignment structure;

filling the structure for molding a light-carrying waveguide to the at least one optical element with a waveguide forming material; and

removing the precision at least one optical element and the light-carrying waveguide from the precision mold, the alignment structure providing sufficiently accurate alignment to eliminate the requirement for active alignment.

67. (previously presented) The method of claim 66 in which filing the structure

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for molding a light-carrying waveguide includes injecting a wave guide forming material under pressure.

68. (previously presented) The method of claim 66 in which filing the structure for molding a light-carrying waveguide includes screening or stenciling a wave guide forming material onto a mold plate.

69. (previously presented) The method of claim 66 in which removing the at least one optical element and the light-carrying waveguide from the precision mold includes removing the at least one optical element and the light-carrying waveguide adhered to a support structure.

70. (previously presented) The method of claim 69 in which the support structure is molded over the at least one optical element and the light-carrying waveguide.